OPERATION MANUAL

ELECTRI-COOL® II

MODEL 767

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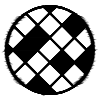
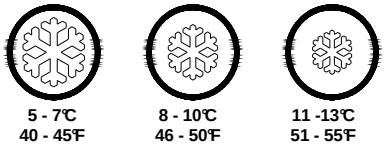
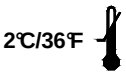
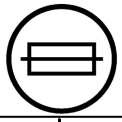
WARNING

- Read Operation Manual before operating.
- At least every 20 minutes, check patient's temperature and skin condition of areas in contact with blanket; also, check blanket water temperature. Pediatric, temperature-sensitive patients with vascular disease, and operating room patients should be checked more frequently. **Notify physician promptly of any change, or if the patient's temperature is not responding properly, or does not reach the prescribed temperature in the prescribed time, or there is a change in the prescribed temperature range. Failure to inform physician of the deviation may result in injury to the patient.**
- **Observe patient's skin condition frequently due to individual differences in sensitivity and susceptibility to injury from cold and/or externally applied chemicals or pressure. Patients at greatest risk are those unconscious, on prolonged therapy, diabetics, children, and persons incapacitated or with insensitive skin areas or poor circulation.**
- Prevent excessive and/or prolonged tissue pressure and shearing forces, especially over bony prominences to prevent skin damage that may result.
- Do not place additional cold sources between the patient and blanket. **Skin damage may result.**
- The area between the patient and the blanket should be kept dry to avoid injury to patient.
- **Do not wrap pad so tightly as to constrict blood flow. Do not use pins to secure pad or hoses. Do not allow pad or hoses to come in contact with any sharp object.**
- Do not use the *Electri-Cool® II* system in the presence of flammable anesthetics. **Risk of explosion can result.**
- The *Electri-Cool® II* system has been designed and tested according to UL-60601-1 and has passed testing regarding the reception and emission of electromagnetic interference. However, operation of the *Electri-Cool® II* system near sources of electromagnetic interference or near sources that may receive electromagnetic interference may cause abnormal operation of this unit or other devices. If interference of this type is observed, re-locate the unit away from such devices.
- Power interruption will cause the *Electri-Cool® II* to revert to the default range of 40℉-45℉ (5℃-7 ℃). Follow instructions for First Time Set-Up/System Test Routine to resume operation. **Failure to resume the desired therapy could result in injury.**
- **This device is still energized when the inlet switch is in the off position. To completely disconnect the device from the power source, remove the appliance plug from the back of the unit.**
- **Electric shock hazard. Do not remove cover. Service to be performed by qualified personnel only.**
- **For continued protection against risk of fire, replace only with same type and rating of fuse.**

CAUTION

- **Use** distilled water only. **Failure to use distilled water may result in poor performance and/or damage to the *Electri-Cool® II voiding the warranty*.**
- **Do not** use De-ionized Water. The majority of de-ionizers do not maintain a neutral pH of 7. If the de-ionized water is acidic, it will cause a battery effect, the metal will begin to deteriorate and may cause a leak in the system.
- **Do not** use alcohol. Alcohol may cause blanket deterioration.
- **Do not** overfill. Overfilling may result in overflow when the water in the **blanket** drains back into the system when the system is turned off.
- **Power cord has "HOSPITAL GRADE" plug (domestic units only). Grounding reliability can only be achieved when connected to an equivalent receptacle marked "HOSPITAL GRADE."**
- Do not operate pump without a pad connected or with pad clamps in the "CLOSED" position. Always check clamps to make sure they are fully open.
- Check hose couplings to be certain they are properly locked together.
- Make sure hose and pads are free of kinks that might restrict flow.
- Complete folding of pad may restrict flow and reduce therapy to patient.
- The pad surface should be checked for damage prior to each application.
- To ensure maximum therapy is delivered, it may be necessary to retain the pad on the patient with straps for adequate contact with the patient.
- Follow Pad instructions and Hospital/Physician instructions for applying, storing, and disposal of product.

1.0 Symbols

	See Accompanying Documentation
	Inspect and Change Filter Periodically
	Temperature Settings
	Low Water Temperature
	Low Water Level
	Type B Applied Part
	Voltage, Alternating Current
	Externally Accessible Fuse Rating
	Potential Equalization Connection (Grounding)
	Power OFF (Located on Switch)
	Power ON (Located on Switch)
	Separate collection for electrical and Electronic equipment

2.0 Receiving Inspection

2.1 After unpacking the *Electri-Cool* ® *II* Cold Therapy Unit, inspect the system for concealed damage. Retain all packing material and carefully record or photograph any damage. Notify the carrier at once and ask for an inspection (in writing). Failure to do this within 15 days may result in loss of claim. Do not return the equipment to Cincinnati Sub-Zero. Call our Medical Technical Service department for further instruction.

3.0 Approvals

3.1 General Safety and Electrical Safety

5R37

Classified by Underwriters Laboratory Inc. ® with respect to Electric Shock, Fire and Mechanical Hazards only in accordance with UL 60601-1, CAN/CSZ-C22.2 No. 601-1, 5R37

3.2 Electromagnetic Compatibility (EMC)

Tested and passed in accordance with IEC 60601-1-2 EMC requirements

3.3 European

CE 0344 In compliance with the Medical Device Directive 93/42/EEC

4.0 Introduction

4.1 Purpose

The purpose of this manual is to provide operation and maintenance instructions for the *Electri-Cool* ® *II* Cold Therapy Unit.

4.2 Clinical Indications

Cold therapy has been found to be clinically effective in accelerating the healing of damaged tissue, and in retarding metabolism within the tissue cells.

Localized cold therapy is used in the operating room, recovery room, intensive care unit, physical therapy, and in individual patient rooms. It is used effectively to treat surgical incisions, as well as wounds and inflammation caused by traumatic injury. It is prescribed with many types of surgery, for example:

- Orthopedic (Arthroscopy, Anterior Cruciate Ligament Repair, Arthroplasty for Hip, Knee, and other Total Joint Replacement)
- Neurologic/Orthopedic (Laminectomy)
- Abdominal (Hernia, Cholecystectomy)
- Oral/Maxillofacial/Plastic (Dental Extractions, Rhinoplasty, Augmentations, Face Lifts)
- Urological (Vasectomy, Prostatectomy, Urological Implants)
- Obstetrical/Gynecological (“C” Section, Episiotomy, Hysterectomy)

In most cases, cold therapy is applied immediately following the surgical procedure directly to the wound site. This acts to help reduce swelling and pain, while also helping to reduce or eliminate the need for pain-killing medications. For the specialty of hand surgery, cold therapy is also applied to the upper extremity before and during the procedure in conjunction with a tourniquet.

Other conditions indicating the application of cold therapy are:

- Acute injuries
- Alopecia
- Arthritis
- Bruises/contusions
- Cellulitis
- Chronic pain
- Low back pain
- Muscle spasms
- Sprains
- Strains

4.3 Contraindications

Observe patient's skin condition frequently due to individual differences in sensitivity and susceptibility to injury from cold and/or externally applied chemicals or pressure. Patients at greatest risk are those unconscious, on prolonged therapy, diabetics, children, and persons incapacitated or with insensitive skin or compromised circulation.

4.4 Description

The *Electri-Cool® II* Cold Therapy Unit has been designed to provide maximum thermal transfer efficiency at optimum safety. The *Electri-Cool®* II consists of a plastic reservoir for holding distilled water; a float switch to sense water level; a pump for circulating water through an external pad; a thermoelectric sub-assembly to cool the water; a microprocessor-based electronic control to regulate water temperature; and a fan to transfer absorbed heat to the ambient air. The user can select among three pre-set temperature ranges: 51ºF-55ºF (11ºC-13ºC); 46ºF-50ºF (8ºC-10ºC); and 40ºF-45ºF (5ºC-7ºC). In addition to the aforementioned features, this model includes audible alarms for low temperature and low water with visual indicators. The unit also shuts down entirely in the event of an internal component over temperature condition.

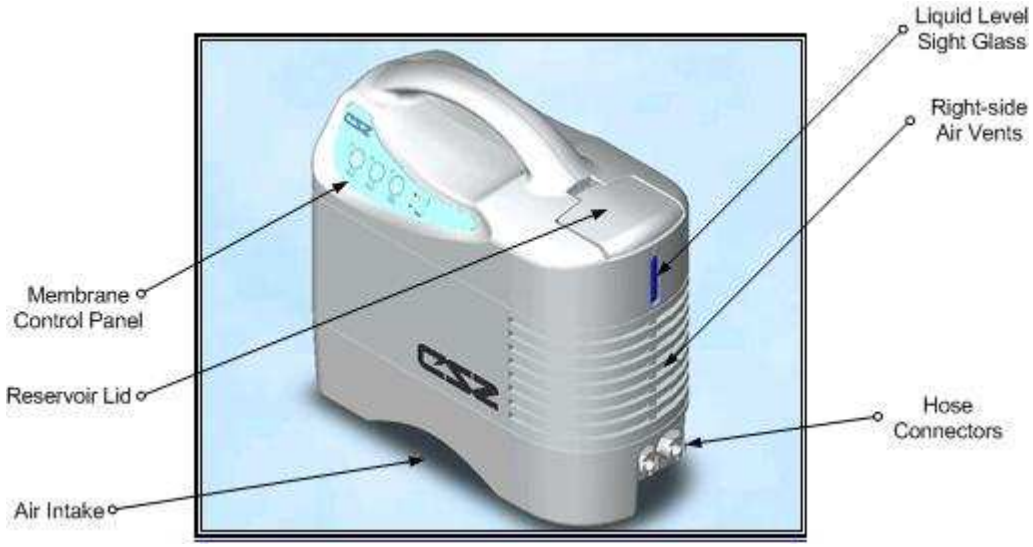


Figure 1.1: *Electri-Cool®* II Front View

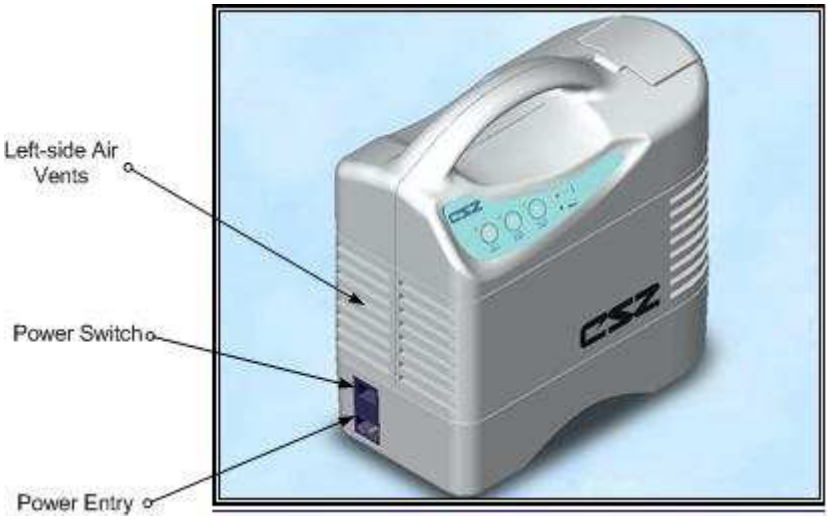


Figure 1.2: *Electri-Cool*® II Left-side View

4.5 Accessories

The essential accessories for the *Electri-Cool*® *II* Unit are listed below:

The Thermal Pads consist of two layers of plastic sealed together to provide multiple passageways for water flow in a random-flow pattern designed to prevent occlusion.

Temp-Pad® Localized Cold Therapy Pads

Urethane with Foam Backing	**Sterile w/o Straps**	**Sterile w/Straps**
3” x 5” (7.6cm x 12.7cm)		305-USS
3" x 18" (7.6cm x 45.7cm)	318-US	
5" x 10" (12.7cm x 25.4cm)	510-US	510-USS
8" x 14" (20.3cm x 35.6cm)	814-US	814-USS
11" x 10" (27.9cm x 25.4cm)	CT-99	
11" x 12" (27.9cm x 30.5cm)	1112-US	1112-USS
12" x 15" (30.5cm x 38.1 cm)	1215-US	

ImmobilICE® Supports consist of a Temp-Pad® Pad contained within a polypropylene felt body, brushed nylon outer laminate and Tietex 100% polyester with hook and loop closures.

ImmobilICE® Supports, Sterile	
Universal Back Support	814-IMB
Universal Hip Support	814-IMH

Temp-Pad Wraps	
Shoulder Wrap - small/medium	707-WSS
Shoulder Wrap - large/x-large	707-WSL
Knee Wrap	707-WKN

The pads are connected to the unit via a hose with self-sealing “quick-connect” couplings containing automatic shut-off valves at each end.

Insulated Hose	
Insulated Connecting Hose, 6' (1.83m)	757-HIN

Other Accessories	
Bed Bracket	767-BBK
Disposable Filter	767-FIL
Mobile Stand (Requires 767-BBK)	767-MST

4.6 Transporting and Storing

Drain all water from the reservoir before shipment or storage. The *Electri-Cool® II* unit can be transported via normal shipping methods via ground, air, or water when packaged in its approved packaging material. During transportation and storage, packaging should not be exposed to conditions that fall out of the ranges below:

4.6.1 Temperature: -40°C to 70°C (–40°F to 158°F)
4.6.2 Humidity: 10% to 100%
4.6.3 Atmospheric Pressure: 500 to 1060hPa (7.25 to 15.37 PSIA)

5.0 Set Up / Operation / Cleaning & Storage

5.1 Equipment Set Up

5.1.1 Before use, check the air filter for accumulated dust. If filter is dirty, replace the filter with a new one. Refer to, "*General Maintenance and Checkout Procedures*", for filter replacement instructions.

5.1.2 Check to ensure that the water level in the reservoir is at its maximum level. The maximum level is at the lowest level of the fill spout (or threaded neck). Refer to "*Filling Instructions*".

Use distilled water only. Failure to use distilled water may result in poor performance and/or damage to the *Electri-Cool® II voiding the warranty*.

5.1.3 The *Electri-Cool® II* unit should be placed on a secure, flat surface at least 61cm (2 feet) from any wall or object that may restrict airflow to the unit. A bed bracket or mounting stand as listed in "Accessories" section can also be used within proximity of the patient such that the attached hoses will reach the desired therapy site.

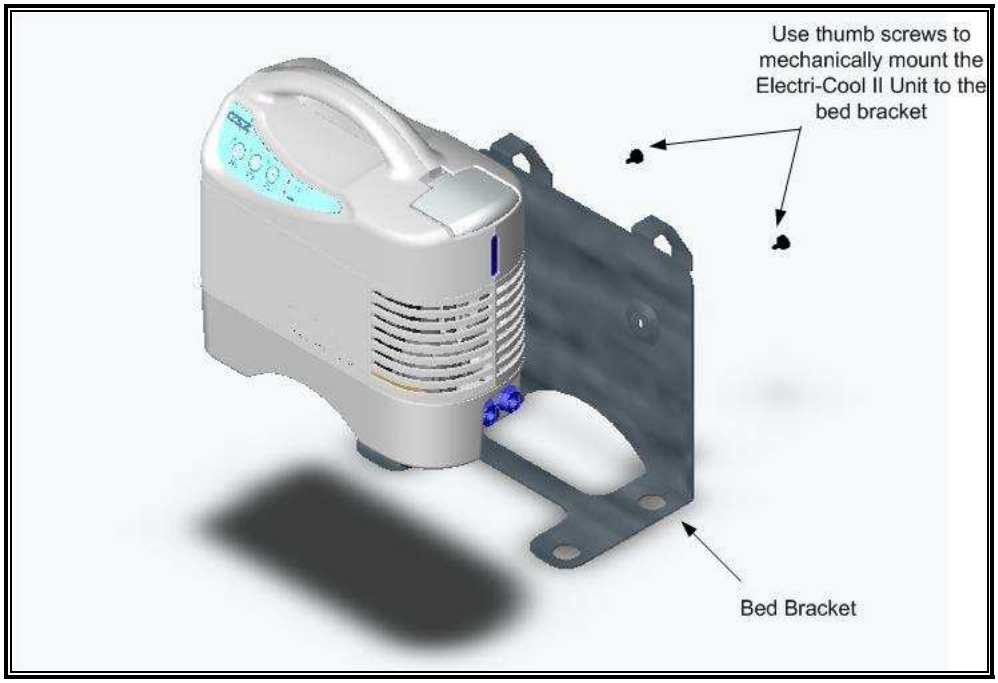


***Figure 5.1*:** Mounting the Electri-Cool II to the Bed Bracket

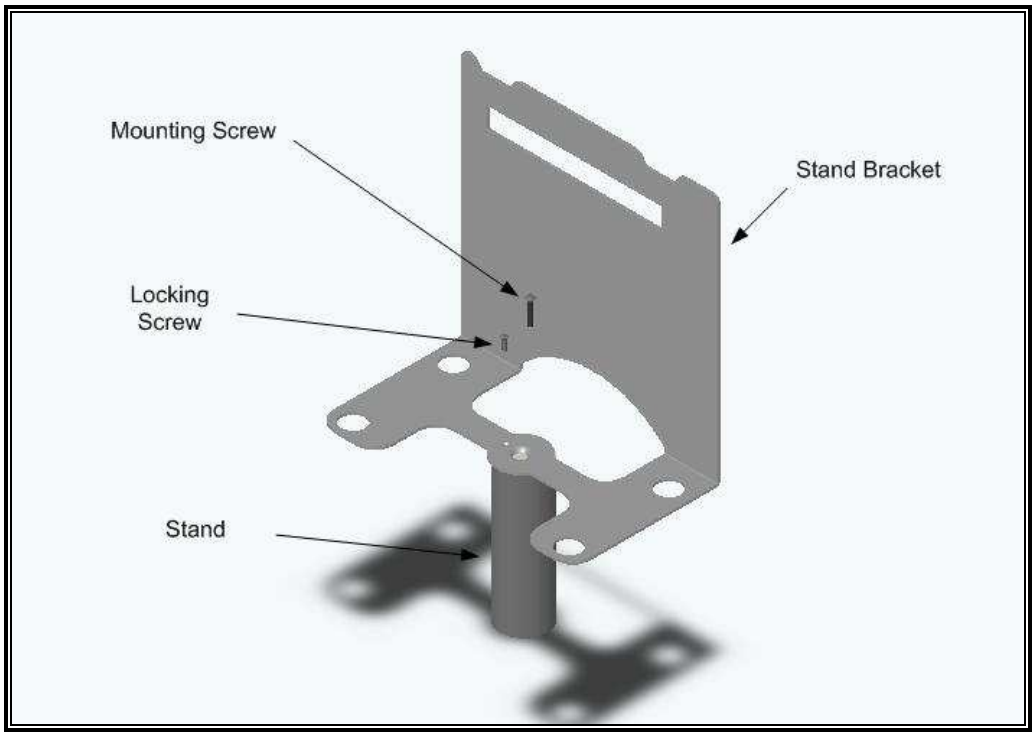


***Figure 5.2*:** Mounting Stand Bracket to Stand Assembly

***Figure 5.3*:** Mounting the Electri-Cool II to Stand

5.2 Filling Instructions

5.2.1 Lift the reservoir lid and fill reservoir with distilled water to its maximum level. The maximum level is at the lowest level of the fill spout (or threaded neck). Close the lid.

Use distilled water only. Failure to use distilled water may result in poor performance and/or damage to the *Electri-Cool® II voiding the warranty*.

5.2.2 Select a CSZ pad and insert the male couplings from the pad into the female couplings on the hose. Make sure couplings are locked together tightly. Check the clamps on the pad making sure they are fully open. The hose and pad must be free of kinks that might restrict flow. Refer to Section "*Pad Instructions".*

Note: *Optimum operation is obtained when water level is well above to low water level marked "MIN". The low water cut-off switch will activate before the water level reaches the bottom of the window*

5.3 Startup Instructions

5.3.1 Plug the power cord into a grounded receptacle providing the proper voltage and frequency.

5.3.2 Press the power switch to the "ON" position. *Electri-Cool® II* Unit will then go into a startup sequence for approximately one minute. During this sequence check to make sure that all audible and visible alarms are working. Check to make sure that there is water flow through the pad. Check water level and refill with cool distilled water if necessary.

5.3.3 The *Electri-Cool® II* Unit is now ready to use.

5.4 Setting Temperature

5.4.1 The *Electri-Cool® II* Unit must be filled with distilled water and connected to a pad before attempting to set temperature.

5.4.2 Select a temperature range among the three possible settings:

1. 11ºC-13ºC (51ºF-55ºF)
2. 8ºC-10ºC (46ºF-50ºF)
3. 5ºC-7ºC (40ºF-45ºF)

5.4.3 A visual light (temperature indicating LED) located in the upper-left area of the selected button will indicate the selected range. Allow fifteen to twenty minutes for the water to reach selected temperature. The time required for the unit to reach the set point depends on the pad used and the ambient temperature. The time may also very from patient to patient.

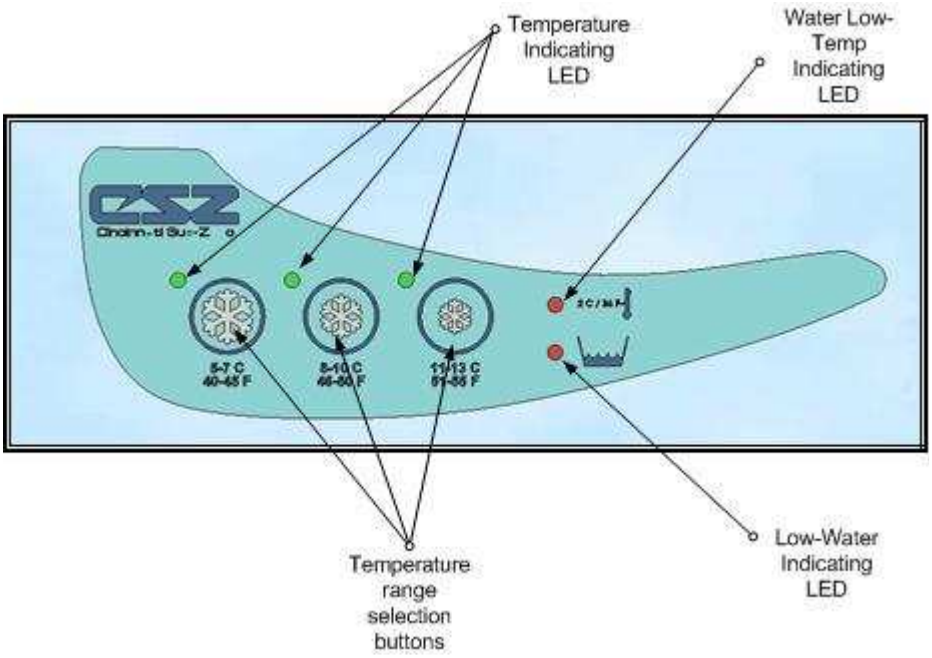


Figure 2.1: Membrane Control Panel

WARNING

- At least every 20 minutes, or as directed by physician, check patient's skin condition of areas in contact with blanket; also, check blanket water temperature. Pediatric, temperature-sensitive patients with vascular disease, and operating room patients should be checked more frequently. **Notify physician promptly of any change, or if the patient's treatment is not responding properly. Failure to inform a physician of the deviation may result in injury to the patient.**
- **Observe patient's skin condition frequently due to individual differences in sensitivity and susceptibility to injury from cold and/or externally applied chemicals or pressure. Patients at greatest risk are those unconscious, on prolonged therapy, diabetics, children, and persons incapacitated or with insensitive skin areas or poor circulation.**
- Prevent excessive and/or prolonged tissue pressure and shearing forces, especially over bony prominences, to prevent skin damage that may result.
- Do not place additional heat or cold sources between the patient and blanket. **Skin damage may result.**
- The area between the patient and the blanket should be kept dry to avoid injury to patient.
- **Do not wrap pad so tightly as to constrict blood flow. Do not use pins to secure pad or hoses. Do not allow pad or hoses to come in contact with any sharp object.**

CAUTION

- Do not operate unit without a pad connected or with pad clamps in the "CLOSED" position. Always check clamps to make sure they are fully open.
- Check hose couplings to be certain they are properly locked together.
- Make sure hose and pads are free of kinks that might restrict flow.
- Complete folding of pad may restrict flow and reduce therapy to patient.
- The pad surface should be checked for damage prior to each application.
- To ensure maximum therapy is delivered, it may be necessary to retain the pad on the patient with straps for adequate contact with the patient.
- Follow Pad instructions and Hospital/Physician instructions for applying, storing, and disposal of product.

5.5 Pad Instructions

The *Electri-Cool® II* has been designed and tested to be used with CSZ thermal pads. Use of non-CSZ manufactured pads may not produce the same results. CSZ pads allow maximum flow while resisting restriction or kinks. The unique foam-layered side or non-woven covered sides offer maximum patient comfort.

5.5.1 Read and understand operation manual before connecting pad to *Electri-Cool® II* unit.

5.5.2 Read and understand pad application instructions accompanying CSZ pad.

5.5.3 Connect hose to unit by inserting connectors on hose into connectors on unit. Connectors should "click" as they lock together.

5.5.4 Apply pad to patient and attach pad to hose by inserting connectors on pad into hose connectors. Normal use of the pad is to be applied in direct contact with the patient. Pad may be used over or under a patient, in the flat state or wrapped around patient.

5.5.5 If the pad has clamps, make sure clamps on tubing of pad are open.

5.5.6 Turn unit "ON" and set to temperature.

5.5.7 After pad has filled, check water level in unit. Add distilled water, only if necessary.

5.5.8 When therapy is no longer needed, turn unit "OFF". Unplug power cord from the outlet.

5.5.9 If the pad has clamps, close clamps on pad.

5.5.10 Disconnect pad from hose by depressing metal clips. Dispose of pad.

5.6 Disposal

Medical Devices that have come in contact with patients contain the risk of bio-contamination. This device generates no waste products or residues under normal use and normal cleaning routines. Follow State and Hospital guidelines regarding disposal of medical devices at the end of their useful lives.

5.7 Cleaning

The *Electri-Cool® II* Unit case is constructed of plastic. Wipe outer surface with a cloth soaked in a solution of water and mild detergent. Rinse cloth of excess solution before applying to unit. Contact the Cincinnati Sub-Zero Technical Service Department for information on the Decontamination Cleaning procedure. Users should not use cleaning or decontamination methods different from those recommended by the manufacturer without first checking with the manufacturer that the proposed methods will not damage the equipment.

5.8 Storage

Drain the reservoir completely before storage of the *Electri-Cool® II* unit. Contact the Cincinnati Sub-Zero Technical Service Department for the reservoir disinfection procedure.

6.0 Specifications

	Electri-Cool® II
Physical	***Model 767***
Size	29.2cm W x 15.24cm D x 30.5cm H (11.5"W x 6.0"D x 12.0"H)
Dry Weight	5.9 kg (13 lbs.)
Hose length	1.83 m (6 ft.)
Portability	Molded, attached, carrying handle
Connectors	Quick-connect, self-sealing
Case Material	G.E. Cycoloy 6600 Plastic
Case Color	Light Grey
Control System	
Type	Microprocessor –controlled
Mode of Operation	Continuous
Cooling System	
Temperature Range	5°- 13°C (40°- 55°F)
Electrical System	
Type of Shock Protection	Class I
Degree of Shock Protection	Type B Applied Part
Voltage	100-240VAC, 50-60Hz.
Current	3.5 Amp.
Fuse	5 Amp rated at 250V 5mm x 20mm Time Delay Qty. 2: Line and Neutral
Power Cord	115V & 100V - 3 conductor, 16/18 AWG, 10’ molded hospital grade plug 230 V – 3 x 1.00mm, 10A, 2.5 m
Leakage Current	Under 50 microamps
Circulating System	
Reservoir Capacity	976mL (33 oz.)
Reservoir Fluid	Distilled water
Fill Cap	Vented
Flow Rate (thru pad)	38 LPH (10 GPH)
Water Level Indication	Translucent window to reservoir
Low Water Cut-Off Switch	Yes (thermoelectrics and pump)
Storage	Dry
Degree of Water Ingress Protection	IPX0 Rated Equipment
Safety System	
Overheat Protection	Internal and power supply heatsink 65.6ºC (150ºF)
Low water	650 mL (22oz)
Low water temperature	3°C (36°F)
Warning Lights	Low Temp and Low Water LED’s
Audible Alarms	Low Temp and Low Water
Classified to UL 60601-1	Yes
Classified to IEC 60601-1-2	Yes

7.0 General Maintenance and Checkout Procedures

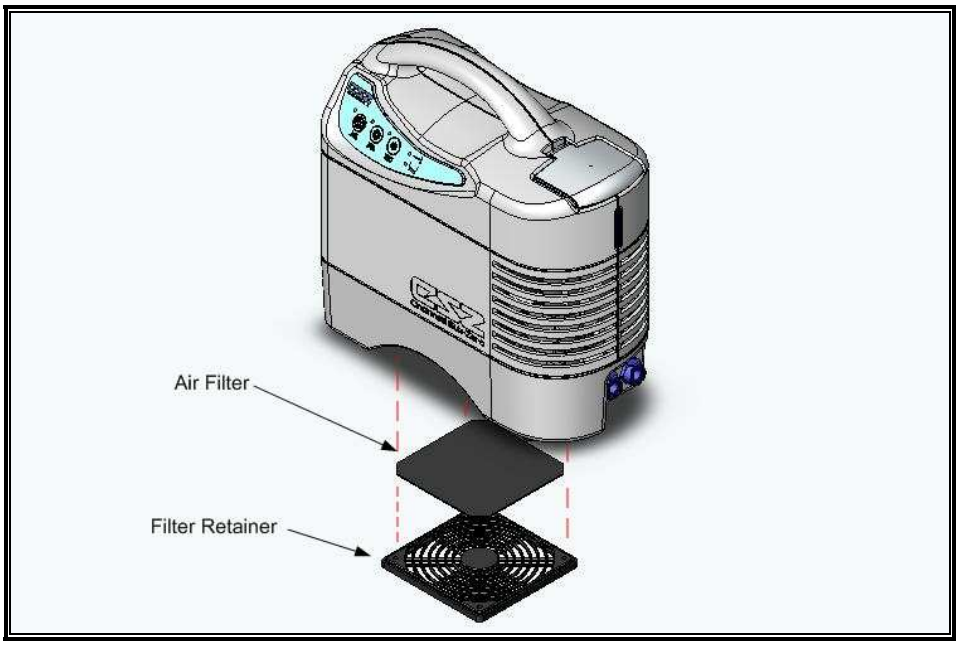
It is suggested you perform the following procedures in their order of listing and document the results on a Preventive Maintenance Inspection Record. Refer to Table 7.0 for an example of an inspection form.

7.1 Exterior Physical Inspection

Look for cracked, bent, missing, or otherwise damaged parts. Carefully inspect the power cord for cuts or exposed wire. Check the plug for missing or bent pins. Remove the fuse and make sure it is the same type and rating as described on top of the unit.

7.2 Air Filter Inspection

Inspect filter before each use of unit. Remove air filter retainer to access the air filter on the bottom of the unit. Inspect the filter for accumulated dust. If the filter is 30% clogged with dust, replace filter with a new one and reattach the air filter retainer.



7.3 Flow Test

Maximum flow rate is obtained with water temperature at room temperature and the pad laying flat on a smooth surface. If no flow rate is observed, check for kinks in the pad or hose, clamps closed on pad, or couplings not properly seated and locked together, or reversed connections to the pump. Allow water temperature to reach room temperature, and check flow rate with a flow meter. If the flow rate is substantially less than 38 LPH (10 GPH), check the pump and/or pad/hose for restrictions. See **Trouble Shooting Guide.**

7.4 Temperature Test

Set Temperature to the coldest setting, 5-7°C (40-45°F). Let pump run 60 minutes to allow internal operating temperatures to stabilize before performing this test. Insert a digital Thermistor (series 400) probe into the outlet water flow stream. Note temperature every 30 seconds for five minutes, (10 readings). Record the average of these readings. The readings should fall within the selected temperature range on digital readout. Temperature swings should not exceed ± two degrees Fahrenheit out of the selected range.

7.5 Low Water Switch/Alarm Test

To perform this test, first open the reservoir access lid. Reach into the reservoir to the float switch and push the float all the way down to it lowest possible position. The low water alarm should sound along with the illumination of the low water level LED located on the membrane control panel. The unit will stop pumping water and stop cooling immediately. Release the float and let it gravitate to its highest position. The unit should now resume normal operation.

7.6 Leakage Current Test

Connect ground lead clamp of leakage current tester to the ground lug on the back of the unit. Plug unit into tester. Test unit in all combinations of power switch off and on, normal and reverse polarity, and normal and open ground. Record highest reading. If more than 50 microamperes, refer to Troubleshooting Guide. Disconnect current leakage tester set-up. Unplug power from the unit.

7.7 Ground Continuity Test

Using an ohmmeter, measure the resistance between the ground lug and the ground pin of the power plug. This value shall not exceed 0.2 ohm. If higher than 0.2 ohm, see Troubleshooting Guide**.**

7.8 Internal Heatsink High-Limit Thermostat Test/Redundant Internal Heat Sink -Limit Thermal Fuse Test

Locate J4 connector on control board. Remove connector. Unit should alarm.

7.9 Water Temperature Low-Limit Thermistor Test

With a decade box insert connector to the low limit thermistor connector on control board, while continuing to close the thermostat and thermistor. Set the resistance on the decade box to 2.22℃ (36℉). The low limit alarm should sound along with the illumination of low limit LED on the membrane control panel. The unit will stop pumping water and stop cooling immediately. Reset the resistance on the decade box to 2.78℃ (37℉). The unit should no w resume normal operation.

7.10 Internal Physical Inspection

While the side enclosure is removed, carefully inspect the unit for any signs of leaks, loose components, or damage. Check wiring for breaks in insulation, exposed wires, loose connections, etc. Repair or replace components as necessary and retest unit before placing back into service. Once inspection is complete, replace enclosure. Note: screws for enclosure are to be tightened to 10 in-lb of torque. Run unit long enough to assure that all connections have been properly made and the pump is in good working order.

Table. 7.0 Sample - Preventive Maintenance Inspection

Procedure	1/1/04	3/1/04	6/1/04
1. Exterior physical inspection	**OK**		
2. Air-filter inspection	**OK**		
3. Flow test—Insert value	***10 GPH***		
4. Temperature test—Insert value	**42°F**		
5. Low water switch test	***OK***		
6. Leakage current test—Insert value	***50*µ**A**		
7. Ground continuity test—Insert value	***.09*Ω**		
8. Internal heatsink Hi-limit thermostat test— Insert value	***OK***		
9. Redundant internal heatsink Hi-limit thermostat test—insert value	***OK***		
10. Water temperature low-limit thermistor value test—insert value	***OK***		
11. Internal physical inspection	***OK***		

8.0 Troubleshooting Guide

8.1 General

This section provides information to aid the service technician in diagnosing problems with the *Electri-Cool® II* Cold Therapy Unit. The left column lists problems that could occur; the right column lists the most probable causes.

Problem	***Probable Cause***
Unit will not turn on.	1. Unit not plugged into proper voltage supply. 2. Blown fuse. 3. Loose connector.
Unit turns on, but will not pump	1. Kinks in pad/hose. 2. Improper connections to pad/hose. 3. Improper connections to P.C. board. 4. Defective P.C. board.
Unit will not cool.	1. Air filter clogged. 2. Air intake blocked. 3. Air outlet vents restricted. 4. Defective P.C. board
Low water warning light/audible on.	1. Reservoir water level too low. 2. Unit Tilted 3. Defective P.C. board(s).
Low temp warning light/audible on.	1. Water used to fill pump too cold. 2. No water flow. 3. Defective P.C. board(s).
LED(s) will not illuminate.	1. Defective membrane control panel. 2. Defective P.C. board.
Desired setting cannot be set	1. Defective membrane control panel. 2. Loose connection to membrane control panel. 3. Defective P.C. board.
Ground continuity exceeds .2 ohm.	1. Loose or disconnected ground (green) wire(s). 2. Defective connector on ground wire. 3. Defective power cord.
Leakage current exceeds 100 microamperes.	1. Defective Power supply

8.2 Alarm Indications

Alarm Condition	Alarm Indicator
Water Low Temp Limit	Constant red LED & audible alarm
Low Water	Constant red LED & audible alarm
Internal Heatsink High Temp Limit	Unit completely shuts down

9.0 Parts List

Item No.	CSZ Part No.	Description
1	19137	Bracket, Pump
2	32018	Lug Ground, Euro
3	32025	Ground Lug Washer, Green/Yellow
4	37034 37029	Power Cord, 2.5 meters, 115V Power Cord, 2.5 meters, 230/240V
5	37093	Fuse
6	39930	Power Supply
7	39990	Control Board
8	40303	Float Switch
9	41901	Thermal Electric Module
10	47026	Fan Guard
11	47910	Fan Motor
12	48023	Pump
13	50113	Insulation Tubing, 3/8” ID x 1/8 W
14	52362	Reservoir
15	52363	Reservoir Lid
16	52381	Enclosure Bottom
17	52382	Side Enclosure Front
18	52383	Side Enclosure Back
19	52554	Panel Mount Coupling
20	52834	Reservoir Collar
21	53536	18” Velcro Strap
22	54041	PVC Tubing, 12 mm ID x 16 mm OD
23	55061	Rubber Feet
24	55118	Carton
25	55502	Air Filter
26	56076	Reservoir Insulation
27	56269	Electri-Cool II Operation Manual
28	56488	Membrane Control Panel
29	57031	Exterior Spec Label
30	57121	Plastic Spacer
31	60102	Screw, 8-32 x ½” flat head SS
32	60219	8-32 x 1” Phillips Pan M/S 300 SS
33	60300	Kepnut, 8-32 Zinc
34	60308	Kepnut, Plated M6
35	60605	#8 internal tooth L/W 410 SS
36	62480	Screw, Filister Head, 10-24 x 3/4”
37	62481	Screw, Plastic 8-32 x1/4”, pan head Phillips
38	62482	Washer, Plastic #8
39	65145	Wire Harness Assembly
40	75900	½” Insulation Tubing
41	70744	PVC Tubing ¼” ID x 3/8” OD Clear
42	71238	Warranty Card
43	71600	6 foot Insulated hose
44	78000	Barbed Elbow, 25 x 25
45	78023	Fuse Holder
46	37356	EMI Suppressor Core, .680
47	37357	EMI Suppressor Core, .993

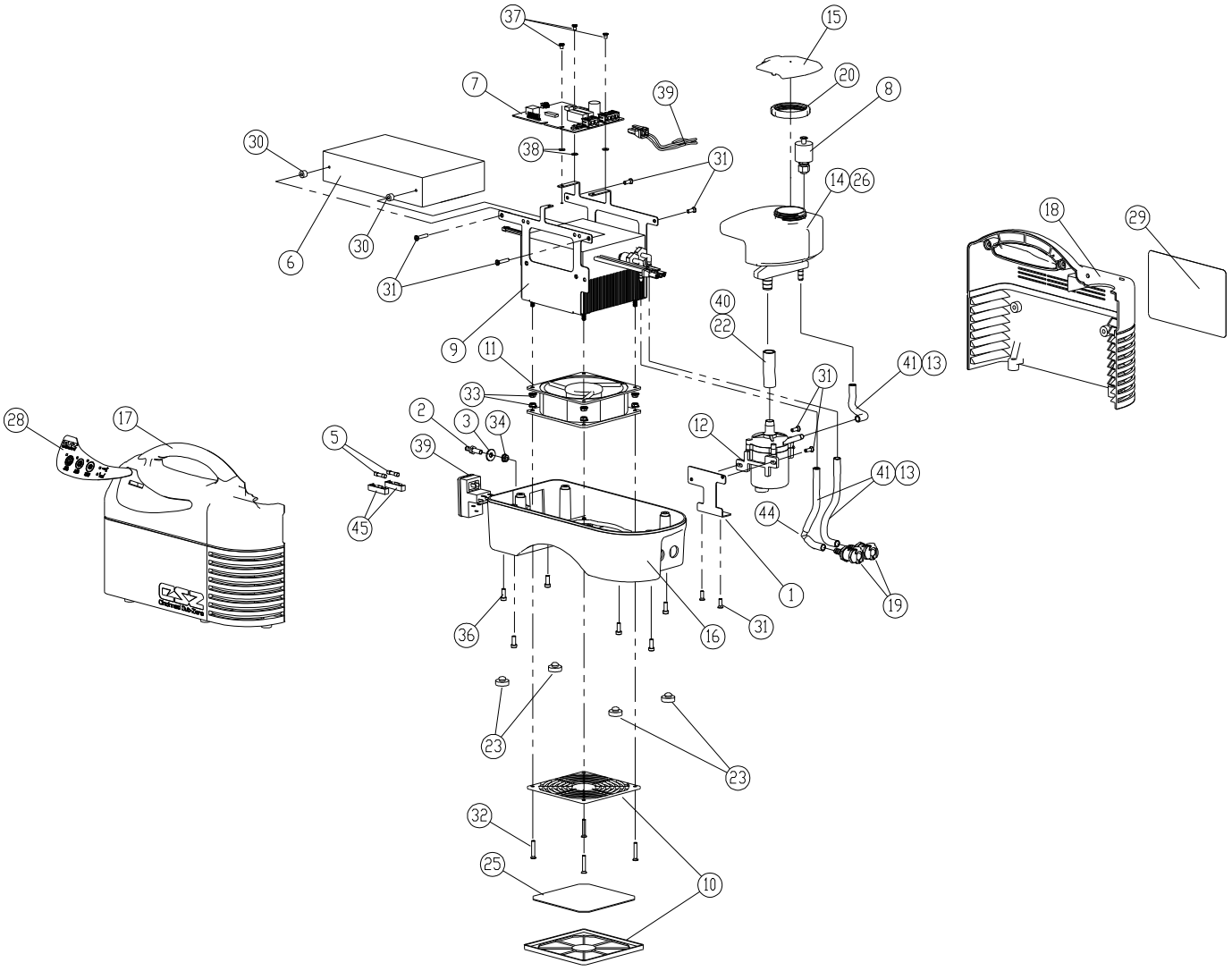


Figure 9.1: Exploded View

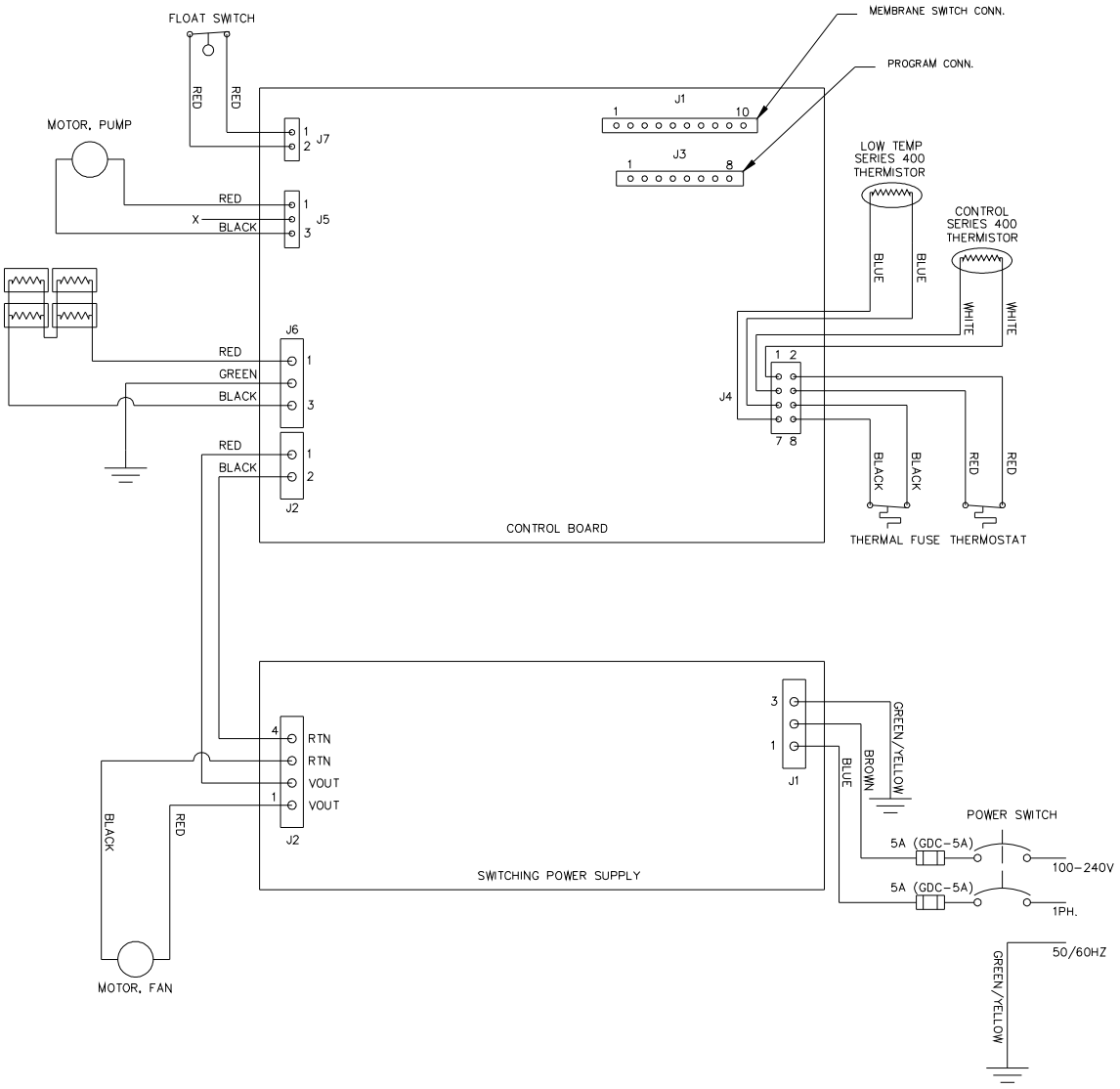


Figure 9.1: Wiring Schematic

11.0 FLUID CIRCUIT DISINFECTION/DRY STORAGE PROCEDURE for Circulating Water Units Utilizing Airkem® A-33®

The following procedure disinfects the fluid circuit in these products. If the product is to be placed back into service, stop after step #5. For protracted storage in a dry state, complete the procedure. The required tools/supplies are appropriate drain hose(s) and/or hose connector(s), a source of compressed air/nitrogen, Airkem® A-33® Disinfectant Packets, distilled water, and the appropriate AC electrical power.

1. Prepare distilled water/ A-33 solution in the volume needed to fill the unit's reservoir(s). Solution must be in the ratio of one packet of A-33 per gallon of distilled water. Set aside for later use.

2. Turn unit **OFF**.

3. Drain the water from the reservoir as described in the Operation Manual for the unit.

4. Flush unit:

    a). Fill the reservoir with solution prepared in step #1.
    b). Turn unit **ON**, set to 5°C - 7°C (40°F- 45°F), and circulate for 5 minutes.
    c). Drain unit as instructed in the Technical Manual for the unit.
    d). Repeat steps 4.a - c. 3 times.

5. **If unit is to be returned to service**, replenish reservoir(s) with the appropriate volume of distilled water.

6. **If unit is being placed in dry storage,** continue with procedure.

7. When all fluid has been removed from the unit, disconnect the drain hose(s) and wipe unit clean.

8. Unit is now ready for storage.

When you are ready to return unit to service, replenish the reservoir(s) with distilled water. Perform all the checks as described in the respective Operation and Technical Manual.

Airkem and A-33 are registered trademarks of Ecolab Inc.

(OPTIONAL METHOD)
FLUID CIRCUIT DISINFECTION/DRY STORAGE PROCEDURE
(for Circulating Water Units Utilizing Household Bleach (Sodium Hypochlorite)

The following procedure disinfects the fluid circuit in these products. If the product is to be placed back into service, stop after step #8. For protracted storage in a dry state, complete the procedure. The required tools/supplies are appropriate drain hose(s) and/or connector(s), a source of compressed air/nitrogen, a supply of household bleach (sodium hypochlorite), Fac-Chek pH strips, distilled water, and the appropriate AC electrical power.

1. Turn unit OFF.

2. Drain the water from the reservoir as described in the Technical Manual for the unit.

3. Flush unit:
    a). Prepare a 9:1 solution of water and sodium hypochlorite (9 parts water and 1 part sodium hypochlorite). Fill reservoir with solution.
    b). Turn unit **ON**, set to 5°C - 7°C (40°F- 45°F), and circulate for 5 minutes;
    c). Drain unit as instructed in the Operation Manual for the unit.
    d). Repeat steps 3.a - c. 3 times.

4. Rinse unit three (3) times as described in Steps 3 a-c above, using **distilled water only.**

5. Fill reservoir(s) with distilled water and circulate.

6. Check the water with Fac-Chek pH strips or other appropriate method for detecting bleach. If bleach is detected, repeat steps 5 and 6.

7. When you no longer detect any bleach, drain reservoir.

8. **If unit is to be returned to service,** replenish reservoir(s) with the appropriate volume of distilled water. **If unit is being placed in dry storage,** continue with procedure.

9. Re-connect the drain hose and drain all the fluid from the unit as in step #3 above, leaving drain hose attached.

10. When all fluid has been removed from the unit, disconnect the drain hose(s) and wipe unit clean.

11. Unit is now ready for storage.

When you are ready to return unit to service, replenish their reservoir(s) with distilled water. Perform all the checks as described in the respective **Operation Manual.**

SUGGESTIONS FOR PROTECTING THE RESERVOIR FROM BACTERIA

If sterile water is used and changed monthly, there should be no problem with bacteria forming in the reservoir or blanket(s). If hospital procedures require the use of a bacteriostatic or bactericidal agent, we suggest Hospital-Approved Bactericidal Agents which are non-acidic and non-foaming.

NOTE: Do not use De-Ionized or Reverse Osmosis Processed Water. The majority of de-ionizers do not maintain a neutral pH of 7. If the de-ionized water is acidic, it will cause a battery effect and the copper refrigeration line will begin to deteriorate and cause a leak in the refrigeration system.

SUGGESTED DECONTAMINATION GUIDELINES FOR CINCINNATI SUB-ZERO EQUIPMENT

(Developed in conjunction with the risk management department at the Shriners Burn Institute in Cincinnati, Ohio)

Decontamination in the Healthcare environment is of the utmost concern with today's array of potential infectious diseases. Cincinnati Sub-Zero has always been aware of these concerns in conjunction with the water reservoirs and circulatory systems of CSZ equipment. For this reason, all CSZ equipment have a suggested monthly schedule for flushing and cleaning the water system in an effort to inhibit the growth of bacteria and fungi.

The following decontamination procedure was developed to effectively rid the water system of all bacteria and not damage any of the internal components of the equipment. All Steps should be followed as closely as possible. This decontamination procedure should be conducted every three (3) months.

The Procedure:

1. Drain the water reservoir of your CSZ unit as described in Operational Manual

2. Flush the unit three (3) times per the following procedure.

   A. Add one (1) ounce (30 cc) of household bleach (sodium hypochlorite) to the empty water reservoir.

CAUTION

It is strongly suggested that appropriate eye protection and gloves be worn when handling and using bleach. Wearing an apron is also suggested to protect clothing.

   B. Fill the reservoir with warm tap water.
   C. Turn the unit on and circulate per the chart below.

UNIT	MODE	TEMPERATURE	DURATION
Electri-Cool II	Cooling	5-7℃ (40-45℉)	5 Min.

   D. Drain the unit after each flush.

3. Rinse the unit three (3) times as described in (2) except to omit the household bleach (sodium hypochlorite).

4. After the third rinse, drain the unit and add 22 ounces (650 liter) of distilled water to the water reservoir and circulate.

5. Check the water with "Fac-Chek" pH strips or other appropriate test method for detecting bleach. If bleach is detected, repeat steps 2 B, C, and D.

6. Once no bleach is detected, add the appropriate amount of U.S.P. Grade Propylene Glycol to the water reservoir per the following chart:

UNIT	U.S.P. GRADE PROPYLENE GLYCOL PER UNIT
Electri-Cool II	1.5 ounces (45 cc)

7. Continue to fill the water reservoir with distilled water.

8. Document the maintenance of the unit.

9. The unit is now ready to be placed back in service.

11.0 Customer Service & Support

To obtain parts or additional information regarding your unit, write or phone:

MAIL: Cincinnati Sub-Zero Products, Inc.
12011 Mosteller Road
Cincinnati, OH 45241-1528
Attn: Customer Service

Phone: 513-772-8810 / 1-800-989- 7373

Authorized European Representative

CEpartner4U
Esdoorlaan 13, 3951 DB Maarn.
The Netherlands

Phone: + 31 (0) 6-516.536.26

The following information is necessary to ensure prompt service:

- Model Number
- Serial Number
- Description of Part
- Part Number (If known)
- Quantity Desired
- Shipping Address
- Shipping Means (If any)

We strongly recommend that all repairs be done by properly trained staff.

CSZ will make available on request information which will assist the user's qualified service personnel to repair those parts of the equipment which are designated by the manufacturer as repairable.

To qualify for credit, warranty parts must be tagged with the following information:

1. The invoice number under which the unit/part was purchased.
2. Cause of failure.
3. Serial Number of Unit.
4. Date of installation or purchase.
5. *RMA Number.

* You must first obtain an RMA number by calling CSZ Customer Service prior to returning an item.